



# California State Rail Plan

2001-02 to 2010-11



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**California Department  
of Transportation**

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# EXECUTIVE SUMMARY

## PART I. – PASSENGER RAIL ELEMENT

### CHAPTER I - INTRODUCTION

Government Code Section 14036 requires the California Department of Transportation (the Department) to complete a 10-year State Rail Plan with both passenger and freight rail elements. The law also requires that the State Rail Plan be updated every two years. The passenger rail element of the *California State Rail Plan 2001-02 to 2010-11* (the State Rail Plan) is an examination of intercity passenger rail transportation in California. This element reviews the current operations of State-supported intercity rail passenger service and outlines 10-year plans for the period 2001-02 through 2010-11 for capital improvements and service expansions. The passenger rail element is covered in Part I (Chapters I through VIII) of the State Rail Plan; the freight rail element is contained in Part II, which begins with Chapter IX.

#### Public Participation

The October 2001 draft of the State Rail Plan was submitted to the California Transportation Commission, as required by State law. The passenger rail element of the State Rail Plan was also reviewed by the Los Angeles-San Diego-San Luis Obispo Rail Corridor Agency (LOSSAN), the San Joaquin Valley Rail Committee, the Capitol Corridor Joint Powers Authority (CCJPA), the Coast Rail Coordinating Council and the Regional Transportation Planning Agencies. Two public meetings were held statewide in August 2000, in Oakland and Los Angeles, to review the freight rail element.

#### The Department's Vision for Intercity Rail

This was developed in 1998 and includes the following elements:

- Provide a rail transportation alternative to other travel modes.
- Provide relief to highway and airway congestion.
- Improve air quality, conserve fuel, and contribute to efficient and environmentally superior land use.

Chapter I of the State Rail Plan establishes standards for the achievement of the Department's 10-year goals in terms of congestion relief, air quality, energy efficiency and improved land use.

#### Amtrak's California Rail Passenger 20-Year Plan

With the publication of Amtrak's *California Passenger Rail System 20-Year Improvement Plan* (the Amtrak Plan) in March 2001, Amtrak's blueprint for a comprehensive passenger rail system in California was created. The Amtrak Plan was developed with the involvement of four task forces, one for

each intercity corridor, including the Pacific Surfliners, San Joaquins, Capitol Corridor and the proposed Coast Route.

### **Interregional Strategic Planning**

The Department's *Interregional Transportation Strategic Plan* (ITSP) is the strategic planning document for interregional capital projects, and is the framework for implementing the Department's interregional transportation funding program. It relies heavily upon the State Rail Plan for its intercity rail portion.

### **Statewide Rail Assessment**

Chapter 597, Statutes of 2001 (AB 1706 - Committee on Transportation), provides for the Department, in conjunction with the Office of Planning and Research, to conduct a statewide rail transportation assessment, incorporating both a passenger and a freight rail systems portion. The assessment will be submitted to the Legislature by October 1, 2002. It will examine rail interconnectivity, identify track congestion, report on plans for capital projects, and examine the cost-effectiveness of current funding for rail projects. Stakeholder committees will be formed to facilitate input on the assessment from public and private entities.

## **CHAPTER II - THE CALIFORNIA RAIL NETWORK**

### **The State's Role in Rail Passenger Service**

The State supports three intercity rail routes: the Pacific Surfliner between San Diego and San Luis Obispo, the San Joaquin between Oakland/Sacramento and Bakersfield, and the Capitol Corridor between San Jose and Auburn. Intercity services are components of the State's overall transportation system. Services intended to meet primarily local needs are developed as commuter and urban rail services rather than intercity. In California, Amtrak currently operates all State-supported intercity rail service under the provisions of the Federal Rail Passenger Service Act (49 U.S.C. 24101).

### **Relationship to Freight Rail Services**

Most rail lines in California are owned and operated by private freight railroad companies, such as the Burlington Northern and Santa Fe (BNSF) and Union Pacific (UP). Upon request of Amtrak (for intercity rail passenger service) and local or regional entities (for commuter rail passenger service), these freight railroads enter into contracts to permit operation of rail passenger services on their lines. They are compensated by Amtrak and other public entities under the provisions of the applicable operating contracts.

## CHAPTER III - FUNDING AND CAPITAL

### Intercity Rail Funding

**Public Transportation Account (PTA).** The PTA is the exclusive source of intercity rail operating funds and a potential source of intercity rail capital funds. The 2001-02 Budget includes \$91 million in PTA funds for track improvements on all three State-supported routes.

**State Highway Account (SHA).** The bulk of the SHA supports the State's highway system, but a portion of the account also supports rail projects in the STIP. In the 1996 STIP, 1998 STIP, 1998 STIP Augmentation, and 2000 STIP, \$356.4 million was programmed for intercity rail projects. Intercity rail projects can be programmed in both the Interregional Transportation Improvement Program (ITIP) and the Regional Transportation Improvement Program (RTIP).

**Traffic Congestion Relief Fund (TCRF).** Chapter 91, Statutes of 2000 (AB 2928 - Torlakson), established the Governor's Traffic Congestion Relief Program (TCRP) to be funded from the TCRF. The TCRP includes \$201.5 million for specific intercity rail capital projects out of a total program amount of approximately \$8.572 billion.

**State Bond Funds.** In 1990 the voters approved the Passenger Rail and Clean Air Bond Act (Proposition 108), which provided \$1 billion in rail bonds, including \$225 million for intercity rail capital projects. The Clean Air and Transportation Improvement Act of 1990 (Proposition 116) provided a \$1.99 billion one-time source of funding for rail and transit projects, including about \$382 million for intercity rail capital projects. Most of these bond funds have been allocated.

**State General Funds.** The 1999-00 and 2000-01 State Budgets provided General Fund money for intercity rail capital projects. The 1999-00 Budget included \$17.5 million for new intercity rail rolling stock. The 2000-01 Budget provided \$30 million for new equipment and \$20 million for track improvements on the San Joaquin Route.

**Local Funds.** Although intercity rail passenger services are funded primarily by the State, a substantial amount of local funds have been invested, mainly on the Pacific Surfliner Route, to fund commuter rail development. Also, intercity rail stations are often owned by cities and funded with local funds in addition to STIP funding.

**Federal Funds.** Federal transportation funds from various programs benefit intercity rail service, particularly through station projects. However, federal flexible transportation funds, such as are provided through the Surface Transportation Program, are generally not available for intercity rail projects.

**Amtrak Funds.** Amtrak develops and funds some California intercity rail capital projects. The largest investment has been in maintenance facilities and rolling stock, including the purchase of 40 new passenger cars and 14 locomotives for the Pacific Surfliner Route at a cost of about \$135 million.

**Railroad Funds.** The State and the railroad that owns the right-of-way of an intercity passenger route sometimes share in the cost of track and signal improvement projects.

### **Intercity Rail Capital Program**

To date, over \$2.4 billion have been invested or reserved for intercity rail capital funding in California. Even with the new funding sources for intercity rail, rail equipment continues to lack an ongoing funding source. This is because restrictions under Article XIX of the State Constitution do not allow rail equipment to be funded from SHA funds. Although the State has provided about 64 percent of the total investment, local entities, the federal government, Amtrak, and the private railroads have made major contributions.

The Department concurs with the "Immediate" and "Near-term" (up to 8 years) increments of the Amtrak Plan, which project \$4.0 billion in capital funding needs for service expansions and new routes. The "Vision" increment of the Amtrak Plan extends it to 20 years and over \$10 billion in funding needs. The Department's 10-year capital program uses the "Immediate" and "Near-term" increments of the Amtrak Plan as input to development of the Department's 10-year capital needs.

The Department's priorities for implementation of capital projects in the State Rail Plan are:

- Increase the cost-effectiveness of State-supported intercity rail.
- Increase capacity on existing routes.
- Reduce running times to attract riders and to provide an efficient service.
- Improve the safety of State-supported intercity rail service, including grade crossing improvements and closures.
- Initiate new cost-effective routes.

Full implementation of this \$4.0 billion 10-year capital program would require major federal funding. If such federal funding is not made available, implementation of this capital program will be delayed to reflect the level of funding available from future STIP programming cycles, as supplemented by other available funding.

## **CHAPTER IV - OPERATIONS AND MARKETING**

### **Operating Program**

**Relationship with Amtrak.** Section 24101(c)(2) of the Federal Rail Passenger Service Act authorizes Amtrak to operate intercity rail passenger service beyond its basic system services when requested to do so by a state. Although Amtrak intends to phase out its need for federal operating subsidies beyond 2001-02, it expects to continue to be able to fund its share of the California State-supported services by use of available funds generated by the balance of its national system. If Amtrak were unable to continue to fund its current share of these services, the amount of State funds needed to continue the present level of service could increase by as much as

\$11.3 million in 2010-11. Alternatively, service levels could be reduced to avoid such a cost increase.

**Funding for Intercity Rail Service Operations.** The 10-year intercity rail ridership and financial projections shown in Figures 4A, 4B and 4C (see Chapter 4) were produced by Amtrak for both current service levels on existing routes and for the increased service levels identified by the Department on these routes. These projections are based upon state-of-the-art ridership and revenue models. The Department concurs that Amtrak's projections are reasonable and appropriate for planning purposes. They reflect the operational enhancements, such as increased frequencies, and reduced running times, made possible by the capital improvements included in the State Rail Plan. The operational enhancements differ from Amtrak's more optimistic assumptions for frequency increases.

**Short-Term Operating Strategies.** The focus of the Department's short-term operating strategies is to improve customer service and amenities and increase the cost-effectiveness of the services. These two strategies are complementary, as an improvement in customer satisfaction should increase ridership and revenue. The Department and the CCJPA are working with the railroads and Amtrak to improve train schedules, on-time performance, bus-train connections and destinations, and passenger amenities.

**Service Evaluation Standards and Goals.** The Department's goal is to provide cost-effective services that will achieve at least 50 percent coverage of costs from the farebox. The Department's standards for adding or removing services are:

- Where the cost-effectiveness of an existing service will be improved by adding or removing frequencies or route segments.
- Where the cost-effectiveness of the State-supported services as a whole will be improved.
- Where the Department has already paid for capacity increases and where others agree to fund capital and/or operating needs.

On all three routes, the goal is frequent service (up to hourly as demand requires) during business hours, and adequate coverage for leisure travelers in the evenings and weekends. For service reliability, the goal is 90 percent on-time performance.

New routes are proposed for intercity markets that have identified demand and support from local entities for rail service. All proposed new routes would utilize existing rail lines that in almost all cases currently have freight traffic and in some cases have Amtrak service.

### **The Department's Marketing Program**

**Marketing and Advertising.** As service improvements, such as increased frequencies and reduced running times, are made possible by the Department's ongoing capital improvement program, the long-term marketing strategy will focus on these improvements and the new markets they create. The Department's ability to market service improvements that

make the train more closely competitive with the automobile will result in significant ridership and revenue gains.

**Public Relations.** The Department's public relations activities include special promotions, media relations, printed materials and special events.

**Passenger Information.** The Department produces informational materials designed to inform customers about routes, schedules, fares, connecting buses and other Amtrak services. Passenger information devices include printed materials, signage, an internet web site and telephone information. In addition, the Department, CCJPA, the Southern California Regional Rail Authority (Metrolink) and Amtrak are working together to develop real-time information displays at selected stations.

## **CHAPTER V - THE PACIFIC SURFLINERS (SAN LUIS OBISPO-SANTA BARBARA-LOS ANGELES-SAN DIEGO)**

### **Principal 2001-2011 Route Objectives:**

- Increase annual ridership 52 percent, from 1,662,000 to 2,518,000 passengers.
- Increase annual revenues 68 percent, from \$20.4 to \$34.3 million, for the State-supported 67 percent of the route operation.
- Increase revenue/cost (farebox) ratio from 53.5 percent to 57.7 percent.
- Reduce the State cost per passenger mile from 16 cents to 13 cents.
- Increase frequency of daily round-trip service, from 11 to 16 trains between Los Angeles and San Diego, from 4 to 6 between Los Angeles and Santa Barbara/Goleta, and from 1 to 2 trains extended beyond Goleta to San Luis Obispo.
- Reduce train-running times to less than two hours between Los Angeles and San Diego, two hours between Los Angeles and Santa Barbara/Goleta and two hours between Santa Barbara and San Luis Obispo.
- Improve the reliability (on-time performance) of trains.
- Provide real-time information to passengers on train status (e.g., anticipated arrival time), particularly at unstaffed stations.

**Performance** - In 2000-01, ridership for all trains was 1,661,704 and the farebox ratio for State-supported trains was 53.5 percent. In Amtrak's 2000-01 fiscal year, the on-time performance of the Pacific Surfliner has averaged 78.2 percent.

**Potential Train Service Improvements** - The Department, in conjunction with Amtrak, anticipates there will be eventual demand for hourly round-trips on the Pacific Surfliners.

It is important to note that the start-up dates for new service on all routes are based on projected service needs. Demonstrated ridership demand, institutional barriers, availability of funding and equipment, and technical problems outside the control of the Department will affect when each of the service improvements can be implemented.

The Department's proposed expansion of the Pacific Surfliner Route is as follows:

- 2003-04 Los Angeles - San Diego, twelfth and thirteenth round-trips, plus two round-trips from Los Angeles to Santa Barbara and one round-trip from Santa Barbara to San Luis Obispo.
- 2005-06 Los Angeles - San Diego, fourteenth round-trip.
- 2006-07 Los Angeles - San Diego, fifteenth round-trip.
- 2008-09 Los Angeles - San Diego, sixteenth round-trip.

## **CHAPTER VI - THE SAN JOAQUINS (BAY AREA-SACRAMENTO-FRESNO-LOS ANGELES)**

### **Principal 2001-2011 Route Objectives:**

- Increase annual ridership 121 percent, from 711,000 to 1,572,000 passengers.
- Increase annual revenues 132 percent, from \$19.7 to \$45.8 million.
- Increase revenue/cost (farebox) ratio from 45.3 percent to 58.4 percent.
- Reduce the State cost per passenger mile from 18 cents to 11 cents.
- Increase frequency of daily round-trip service from 4 to 5 between Oakland and Bakersfield and from 1 to 3 between Sacramento and Bakersfield.
- Reduce train running times to five and a half hours between Oakland and Bakersfield and four hours forty minutes between Sacramento and Bakersfield.
- Improve the reliability (on-time performance) of trains.

**Performance** - Ridership for all trains in 2000-01 was 710,833 and the farebox ratio was 45.3 percent. In Amtrak's 2000-01 fiscal year, on-time performance has averaged 67.4 percent. The TCRP contains funding to double track portions of the San Joaquin Route, which will improve the reliability and on-time performance of the San Joaquins.

**Potential Train Service Improvements** - The most immediate need will be for additional round-trips between Sacramento and Bakersfield. The Department will add the sixth round-trip in 2001-02, which will be the second train between Sacramento and Bakersfield.

The Department's proposed expansion of the San Joaquin Route is as follows:

- 2001-02 Sacramento - Bakersfield, second train to extend from Stockton to Sacramento (sixth round-trip on route).
- 2004-05 Sacramento - Bakersfield, third train to extend from Stockton to Sacramento (seventh round-trip on route).
- 2006-07 Oakland - Bakersfield, fifth train to extend from Stockton to Oakland (eighth round-trip on route).



## **CHAPTER VII - THE CAPITOLS (AUBURN-SACRAMENTO-OAKLAND-SAN JOSE)**

### **Principal 2001-2011 Route Objectives:**

- Increase annual ridership 193 percent, from 1,031,000 to 3,018,000 passengers.
- Increase annual revenues 203 percent, from \$11.1 to \$33.6 million.
- Increase revenue/cost (farebox) ratio from 40.1 percent to 53.5 percent.
- Reduce the State Cost per passenger mile from 21 cents to 11 cents.
- Increase frequency of daily round-trips from 4 to 10 between San Jose and Oakland, from 9 to 16 between Oakland and Sacramento, and from 1 to 5 between Sacramento and Roseville.
- Reduce train-running times to an hour and a half between Sacramento and Oakland.
- Improve the reliability (on-time performance) of trains.
- Provide real-time information to passengers on train status (e.g., anticipated arrival time), particularly at unstaffed stations.

**Performance** - Ridership for all trains in 2000-01 was 1,030,837 and the farebox ratio was 40.1 percent. In Amtrak's 2000-01 fiscal year, the on-time performance has averaged 77.8 percent.

**Potential Train Service Improvements** - The Department's proposed expansion of the Capitol Corridor is as follows:

- 2001-02 Sacramento - Oakland, eighth and ninth round-trips (began 4/29/01). Oakland - San Jose, fifth and sixth round-trips (weekend round-trips began 4/29/01). Sacramento - Roseville, second and third round-trips.
- 2003-04 Sacramento - Oakland, tenth and eleventh round-trips. Oakland - San Jose, seventh round-trip.
- 2004-05 Sacramento - Oakland, twelfth round-trip. Oakland - San Jose, eighth round-trip. Sacramento - Roseville, fourth round-trip.
- 2005-06 Sacramento - Oakland, thirteenth round-trip.
- 2006-07 Sacramento - Oakland, fourteenth round-trip. Oakland - San Jose, ninth round-trip.
- 2008-09 Sacramento - Oakland, fifteenth round-trip. Oakland - San Jose, tenth round-trip. Sacramento - Roseville, fifth round-trip.
- 2010-11 Sacramento - Oakland, sixteenth round-trip.

The CCJPA assumed responsibility for management of this service on July 1, 1998, and has proposed an enhanced level of service for the 10-year period of the State Rail Plan. The CCJPA proposal includes 16 round-trips between Sacramento, Oakland and San Jose within 10 years, with 10 round-trips extending to Roseville and 4 to Auburn.

## CHAPTER VIII - POTENTIAL NEW SERVICES

### High-Speed Rail

In 1996, the California High-Speed Rail Act founded the California High-Speed Rail Authority (CHSRA) to direct the development and implementation of intercity high-speed rail service. The Authority's June 2000 business plan, *Building a High-Speed Train System for California*, found that a high-speed train system is a smart investment in mobility, an evolutionary step for transportation, and a project in keeping with California's standards for environmental quality and economic growth. The Authority determined that the next step in the development of the project is to proceed to develop a program environmental impact report (EIR). The EIR is expected to be completed by June 2003.

### California Maglev Project

The initial corridor study area of the California Maglev Project extends from Los Angeles International Airport (LAX) to Union Station in downtown Los Angeles and further east to Ontario International Airport and on to March Field in Riverside County, a distance of approximately 85 miles. The Southern California Association of Governments and the California Business, Transportation and Housing Agency are the project sponsors.

### Proposed Intercity Rail Routes

The Department proposes five new routes and Amtrak is supporting an additional route.

**Los Angeles to Las Vegas.** Amtrak proposes to start service in late 2002 using state-of-the-art Talgo tilt train equipment to achieve a five and one-half hour travel time between Los Angeles and Las Vegas. The Department includes no operating costs in its 10-year plan for this service because the State of Nevada has agreed to arrange for operating support.

**San Francisco to Los Angeles via Coast Route.** The Department's 10-year operating plan includes one round-trip train between San Francisco and Los Angeles, starting in 2003-04, that would use tilt-train equipment (if available). The Department projects adding a second train in 2006-07.

**San Francisco to Monterey.** The Department's 10-year operating plan includes two weekday round-trips (and three weekend round-trips) using high quality equipment to start in 2005-06.

**Los Angeles to Coachella Valley.** The Department is proposing to start one round-trip in 2006-07 and a second round-trip in 2008-09. The service would run from Los Angeles to Palm Springs, Palm Desert and Indio in the Coachella Valley.

**Sacramento to Reno.** The Department is proposing to extend one round-trip of the Capitol Corridor from Sacramento to Reno/Sparks in 2007-08. This service would require an appropriate level of financial participation from the State of Nevada and Nevada business interests.

**Sacramento to Redding.** The Department is proposing to extend one daily round-trip of existing Sacramento rail service to Redding in 2008-09.

## **PART II. – FREIGHT RAIL ELEMENT**

### **CHAPTER IX - CALIFORNIA'S RAIL SYSTEM**

The freight rail element of the State Rail Plan provides a detailed account of California's freight rail system, how it operates and serves the people living in the Golden State. This document was developed as part of the State's overall planning process to provide information to transportation officials, policy makers, railroad managers, and transportation planners. The freight rail element begins with an overview of the State's rail system. It discusses the routes operated by the Union Pacific and Burlington Northern and Santa Fe Railroads. The plan looks at the one regional railroad and 28 short line railroads operating on 25 percent of California's rail mileage. It points out the important role they play in moving international freight to and from California's seaports. The plan also discusses the various types of commodities shipped by rail in and out of California.

### **CHAPTER X - MAJOR FREIGHT ISSUES**

Several freight issues are discussed that impact the railroad's ability to move freight efficiently. Areas include: mainline choke points caused by geographic restrictions and mainline congestion caused by the tremendous growth in intermodal traffic and the sharp increase in the number of passenger trains operating on freight railroads. Port projects in Southern California show a doubling of international container shipments from 10 to 20 million by 2020. Capacity issues are a growing concern among California's railroads and rail shippers.

Short line railroad issues include the industry's movement to heavier rail cars to try to keep transportation costs down and take advantage of the economies of scale. The problem is most short line railroads do not have the infrastructure to accommodate these heavier 286,000-pound rail cars. Short line railroads operate on a very tight budget and do not have the revenue base to make these major capital improvements. Without some kind of financial assistance to make these capital improvements, these shipments will have to be moved by truck at a greater cost to the shipper and an increase in highway maintenance and congestion cost to the State.

Rail shipper concerns are also discussed. Their issues include: congestion at intermodal terminals, lack of equipment, lost rail cars, delays to rail shipments to due increased passenger trains and grade crossing accidents.

## **CHAPTER XI - SHORT LINE ANALYSIS**

Short line railroads play an important role in California's overall transportation system, especially for rural communities not served by Class I railroads. There are 28 short line railroads operating on 1,832 miles or 33 percent of the State's rail mileage. The results of a survey of California's short line railroads are included in this section. Key issues of concern include: the inability to upgrade their infrastructure to accommodate 286,000-pound rail cars on their lightweight track and bridge infrastructure, the need for improved grade crossing protection devices, and the need for the State to take a more active role in preserving rail service to rural areas of California.

Commodities shipped by short lines are identified in the plan with wood products making up the largest proportion at 24 percent followed by food products at 22 percent. The project team estimated upgrade costs for all California short lines using a methodology developed specifically to handle 286,000-pound cars. The total statewide short line upgrade cost is on the order of \$290 million. Potential impacts to highway congestion and maintenance costs due to railroad closures are also discussed.

## **CHAPTER XII - FUNDING**

In 1999, California short line railroads handled over 750,000 carloads of international freight. Many California short lines serve industries along the I-5, I-10, I-40 and I-80 corridors. They also provide switching services to the Ports of Los Angeles, Long Beach, Oakland, Hueneme, and Stockton. Short line railroads also provide services to business in the rural portions of California who would otherwise have to rely strictly on trucks to move their freight.

The American Association of State Highway and Transportation Officials (AASHTO) estimates that the 10-year infrastructure needs for American short lines total between \$8 and \$12 billion, of which only 20 percent can be funded by the railroads themselves. Federal rail funding programs are discussed including: Local Freight Rail Assistance (LFRA), Light Density Line (LDL), Rail Rehabilitation and Improvement and Financing (RRIF), Congestion Mitigation and Air Quality Improvement (CMAQ), National Coordinated Planning and Development (NCPD), Coordinated Border Infrastructure (CBI), Transportation and Community System Preservation (TCSP), Highway Rail Crossing (Section 130) and the Transportation Infrastructure Finance Assistance (TIFIA) programs.

State funding programs for railroads are examined noting that when the LDL program was not funded under TEA 21, thirty other states began or continued to provide state funds for loan or grant programs to assist short line railroads in making infrastructure improvements. Of the \$2 billion made available to short line railroads during the period of 1976 to 1995, 26 percent was from federal grants, 40 percent was from state grants, 26 percent from local funds and 8 percent from state loans.

### **CHAPTER XIII - ENVIRONMENTAL REVIEW**

Environmental issues are discussed in detail to stress the need for an integrated planning effort to better address the needs of California's transportation system. Topics include: noise impacts, vibrations, railroad crossing safety, accidents, air quality and locomotive emissions. The impacts to local communities from locomotive horn blowing at grade crossings are discussed as well as the US Environmental Protection Administration's (EPA) standards for noise emissions. The Federal Railroad Administration is charged with enforcing these noise standards.

Delays at railroad crossings and accidents due to the increase in train traffic are also discussed. The Alameda Corridor project will eliminate 200 grade crossings improving safety and reducing traffic delays between Long Beach and Los Angeles. Locomotive emissions are discussed in detail noting the new EPA standards.

### **CHAPTER XIV - NEW TECHNOLOGY**

Eight new technology areas are discussed:

- Global positioning system applications
- Positive train control
- Information technology applications
- Electronic commerce
- Alternating current locomotive technology
- Electronic banking
- Increased car capacity
- Rail car improvements

### **CHAPTER XV - FUTURE NEEDS**

California's rail system is rapidly running out of capacity due to a large increase in passenger train activity as well as tremendous growth in international trade moving by rail. While the needs of passenger rail operations are being addressed by the State, the landside freight transportation system is not. In order for California to remain competitive in a global economy, more funds need to be devoted to improving the State's system of highways and railroads that handle this international cargo.

The case for funding for short line railroads is a compelling one. Without outside assistance, many of the State's short line railroads will be unable to accommodate the heavier rail cars forcing more freight to move by truck and impacting the railroads ability to stay in business. The environmental, economic, safety and mobility benefits need to be considered when evaluate infrastructure projects.